

PATENT ASSIGNMENT COVER SHEET

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 Stylesheet Version v1.2

EPAS ID: PAT2626972

SUBMISSION TYPE:	NEW ASSIGNMENT																		
NATURE OF CONVEYANCE:	ASSIGNMENT																		
CONVEYING PARTY DATA																			
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>GAOZHONG ZHU</td> <td>08/08/2011</td> </tr> <tr> <td>KRIS LOWE</td> <td>08/05/2011</td> </tr> <tr> <td>ZAHRA SHAHROKH</td> <td>08/05/2011</td> </tr> <tr> <td>JAMES CHRISTIAN</td> <td>08/11/2011</td> </tr> <tr> <td>RICK FAHRNER</td> <td>08/12/2011</td> </tr> <tr> <td>JING PAN</td> <td>08/05/2011</td> </tr> <tr> <td>TERESA LEAH WRIGHT</td> <td>08/10/2011</td> </tr> <tr> <td>PERICLES CALIAS</td> <td>08/17/2011</td> </tr> </tbody> </table>		Name	Execution Date	GAOZHONG ZHU	08/08/2011	KRIS LOWE	08/05/2011	ZAHRA SHAHROKH	08/05/2011	JAMES CHRISTIAN	08/11/2011	RICK FAHRNER	08/12/2011	JING PAN	08/05/2011	TERESA LEAH WRIGHT	08/10/2011	PERICLES CALIAS	08/17/2011
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PERICLES CALIAS	08/17/2011																		
RECEIVING PARTY DATA																			
Name:	SHIRE HUMAN GENETIC THERAPIES, INC.																		
Street Address:	300 SHIRE WAY																		
City:	LEXINGTON																		
State/Country:	MASSACHUSETTS																		
Postal Code:	02421																		
PROPERTY NUMBERS Total: 1																			
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13974457</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13974457														
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Application Number:	13974457																		
CORRESPONDENCE DATA																			
Fax Number:	(617)502-5002																		
Phone:	617-248-5000																		
Email:	patentdocket@choate.com																		
<i>Correspondence will be sent via US Mail when the email attempt is unsuccessful.</i>																			
Correspondent Name:	CHOATE HALL & STEWART LLP																		
Address Line 1:	TWO INTERNATIONAL PLACAE																		
Address Line 4:	BOSTON, MASSACHUSETTS 02110																		

ATTORNEY DOCKET NUMBER:	2006685-0352
NAME OF SUBMITTER:	JUSTIN P. HUDDLESON
Signature:	/Justin P. Huddleson/
Date:	11/25/2013

Total Attachments: 11

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JOINT ASSIGNMENT

WHEREAS, each of the below-named inventors whose name and residence is set forth in the following Table 1:

Inventor Name	City, State Zip
1. Gaozhong Zhu	Weston, MA 02493
2. Kris Lowe	Boston, MA 02120
3. Zahra Shahrokh	Weston, MA 02493
4. James Christian	
5. Rick Fahrner	Boxford, MA 01921
6. Jing Pan	Boxborough, MA 01719
7. Teresa Leah Wright	Lexington, MA 02142
8. Pericles Calias	Melrose, MA 02176

Table 1

hereby declares and agrees, on behalf of himself/herself and all of his/her successors and assigns that each is aware of the patent applications entitled:

METHODS AND COMPOSITIONS FOR CNS DELIVERY OF IDURONATE-2-SULFATASE ; and

prepared for filing in the United States Patent and Trademark Office; or

identified by United States Application Serial No. **13/168,966** and International Application No. **PCT/US11/41925** both filed in the United States Patent and Trademark Office on **June 25, 2011**; and

and am also aware of the following priority applications:

Serial No.: 61/358,857; Filed: June 25, 2010

Serial No.: 61/360,786; Filed: July 1, 2010

Serial No.: 61/387,862; Filed: September 29, 2010

Serial No.: 61/435,710; Filed: January 24, 2011

Serial No.: 61/442,115; Filed: February 11, 2011

Serial No.: 61/476,210; Filed: April 15, 2011

Serial No.: 61/495,268; Filed: June 9, 2011

WHEREAS **Shire Human Genetic Therapies, Inc.** (hereinafter "ASSIGNEE"), having a usual place of business at **700 Main Street, Cambridge, MA 02139**, desires to acquire or confirm an interest therein;

NOW, THEREFORE, to all whom it may concern be it known that, in consideration of agreements previously and duly entered into between the parties, and/or for other good and

valuable consideration, the receipt of which is hereby acknowledged, I have sold, assigned, and transferred and/or do hereby sell, assign, and transfer unto said ASSIGNEE, its successors, assigns, and legal representatives, my entire right, title, and interest in and throughout the United States of America, its territories and all foreign countries, in and to any and all inventions described in the patent application, and/or any priority applications noted above; and hereby confirm that my sale, assignment, and/or transfer is and was effective at least as of the filing date of the patent application and/or priority application. My sale, assignment and/or transfer applies to the above-referenced patent application, and to any application that is based in whole or in part on the patent application, including to divisional, continuing, substitute, renewal, reissue, reexamination and other applications, for example that claim priority to the patent application. Also, this sale, assignment, transfer pertains to any and all other rights arising under or pursuant to any and all international agreements, treaties, or laws relating to the protection of industrial property, including all rights of priority under the International Convention for the Protection of Industrial Property, and in and to any such patent(s) as may issue thereon including any and all original and reissued patents which have been or shall be issued in the United States and foreign countries; said inventions, applications, and patent(s) to be held and enjoyed by ASSIGNEE for its own use and for its successors, assigns and legal representatives, to the full end of the term for which said patent(s) may be granted as fully and entirely as the same would have been held by me had this sale, assignment and transfer not been made;

AND, I hereby acknowledge that this Assignment, being of my entire right, title, and interest in and to the inventions, carries with it the right in ASSIGNEE, by attorneys and agents of ASSIGNEE selection, to apply for and receive any and all patent(s) for said inventions in its own name;

AND, I hereby further agree for myself and my executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the patent(s) to ASSIGNEE, its successors, assignees, and legal representatives, but at its expense and charges, including the execution of application for patents in foreign countries, the execution of substitution, reissue, divisional or continuation applications, and the giving of testimony, preliminary statements, or other statements in any interference or other proceeding in which the inventions or any applications or patents directed to the inventions may be involved by communicating to the ASSIGNEE all facts I know relating to the inventions and their history, and generally by doing everything possible which ASSIGNEE shall consider desirable for aiding in securing and maintaining proper patent protection for the inventions and for vesting title in the inventions and all applications for patent and all patents on the inventions in ASSIGNEE;

AND, I further hereby authorize ASSIGNEE or its attorneys or agents to insert the correct serial number(s) and/or filing date(s) into this assignment document, if appropriate;

AND, I hereby appoint ASSIGNEE as my common agent for purposes of prosecuting international patent applications and any national patent applications for which such common agency is recognized;

AND, I hereby request the Director of Patents and Trademarks of the United States to issue any and all patent(s) as shall be granted upon said application or applications based thereon to ASSIGNEE, its successors, assigns, and legal representatives;

AND, I covenant with said ASSIGNEE that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by me, and that full right to convey the same as herein expressed is possessed by me.

SIGNED this 08 day of August, 2011.

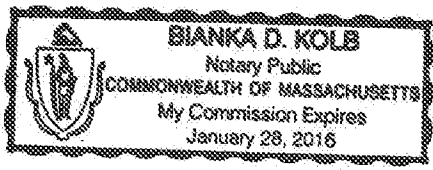

Name: Gaozhong Zhu

STATE OF Massachusetts SS.


COUNTY OF Middlesex

Before me this 8th day of August, 2011, personally appeared Gaozhong Zhu, and proved to me through satisfactory evidence of identity which was known to me to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC Bianka Kolb
Name: Bianka Kolb
My Commission Expires: Jan. 28, 2016



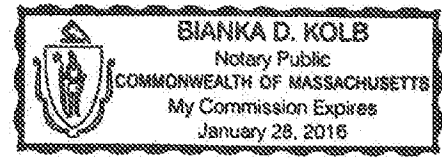
SIGNED this 05 day of August, 20 11.


Name: Kris Lowe

STATE OF Massachusetts
COUNTY OF Middlesex SS.

Before me this 5th day of August, 20 11, personally appeared Kris Lowe, and proved to me through satisfactory evidence of identity which was known to me to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC Bianka Kolb
Name: Bianka Kolb
My Commission Expires: Jan 28, 2016



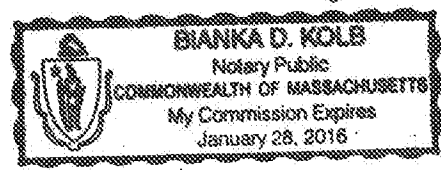
SIGNED this 05 day of Aug, 2011.

Zahra Shahrokh
Name: Zahra Shahrokh

STATE OF Massachusetts SS.
COUNTY OF Middlesex

Before me this 5th day of August, 2011, personally appeared Zahra Shahrokh, and proved to me through satisfactory evidence of identity which was KNOWN TO ME to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC Bianka Kolb
Name: Bianka Kolb
My Commission Expires: Jan. 28, 2016



SIGNED this 11 day of August, 2011.

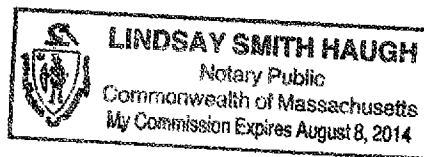
James Christian
Name: James Christian

STATE OF Massachusetts SS.
COUNTY OF Middlesex

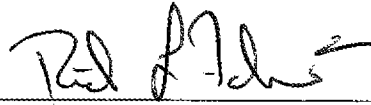
Before me this 11th day of August, 2011, personally appeared James Christian, and proved to me through satisfactory evidence of identity which was MA DRIVERS LICENSE to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC

Lindsay Smith Haugh
Name: Lindsay Smith Haugh
My Commission Expires: 8/8/2014



SIGNED this 12th day of August, 2011.



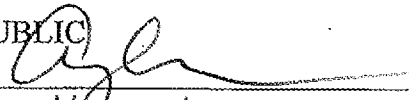
Name: **Rick Fahrner**

STATE OF Massachusetts SS.

COUNTY OF Middlesex

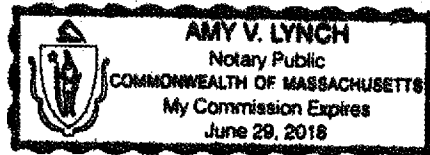
Before me this 12th day of August, 2011, personally appeared Rick Fahrner and proved to me through satisfactory evidence of identity which was MA license to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC



Name: Amy V. Lynch

My Commission Expires: June 26, 2018



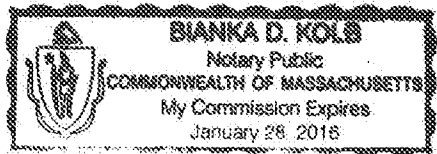
SIGNED this 5th day of August, 2011.

Jing Pan
Name: Jing Pan

STATE OF Massachusetts SS.
COUNTY OF Middlesex

Before me this 5th day of August, 2011, personally appeared Jing Pan, and proved to me through satisfactory evidence of identity which was known to me to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC Bianka Kols
Name: Bianka Kols
My Commission Expires: Jan. 28, 2016



SIGNED this 10th day of August, 2011.

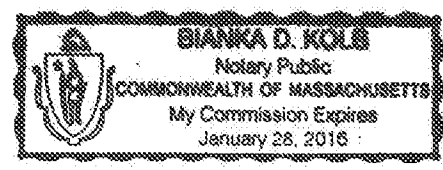
[Signature]
Name: Teresa Leah Wright

STATE OF Massachusetts SS.

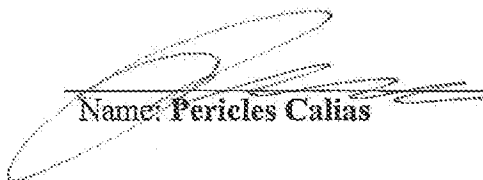
COUNTY OF Middlesex

Before me this 10th day of August, 2011, personally appeared Teresa Leah Wright, and proved to me through satisfactory evidence of identity which was known to me to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC [Signature]
Name: Bianka Kols
My Commission Expires: Jan. 28, 2016



SIGNED this 17 day of August, 20 11.

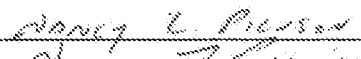

Name: Pericles Calias

STATE OF Massachusetts SS.

COUNTY OF Middlesex

Before me this 17 day of August, 20 11, personally appeared Pericles Calias, and proved to me through satisfactory evidence of identity which was MA Drivers License to be the person whose name is signed on the preceding or attached document, and acknowledged that he/she executed the same, of his/her own free will and for the purposes set forth.

NOTARY PUBLIC


Name: Nancy L. Plesner
My Commission Expires: 08 Dec 2017